

AMENDMENTS TO THE DRAWINGS

No Amendments to the drawings are made herein.

AMENDMENTS TO THE SPECIFICATION

5 No Amendments to the specification are made herein.

AMENDMENTS TO THE CLAIMS

No Amendments to the claims are made herein.

REMARKS

In view of the following remarks, Applicant respectfully requests reconsideration and allowance of the subject application. This amendment is believed to be fully responsive to all issues raised in the final Office Action
5 mailed April 26, 2005.

Double Patenting Rejections

It appears from the final Action that the double patenting rejections have been dropped.
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Rejections Under 35 U.S.C. §103

Claims 1-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,260,120 to Blumenau (hereinafter, "Blumenau"). Applicant respectfully traverses these rejections.
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Claim 1

Claim 1 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.
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To establish a *prima facie* case of obviousness, the Action must establish that each element of the claim is disclosed or suggested by the cited references. See, MPEP 2142. Independent **claim 1** includes a limitation requiring "an agent coupled to the host, the agent having volatile memory for storing a first table, the table having entries to map the virtual
25 storage segments to the storage locations." The Action asserts that

Blumenau discloses this limitation, and cites Fig. 30 and col. 8. lines 56-62, col. 30, lines 53-55 and col. 32 lines 43-55 to support the assertion.

Applicants disagree. A close inspection of Blumenau reveals that Fig. 30 is a GUI display that maps a relationship between logical storage volumes on

5 the storage subsystem and the volumes addressed by the host. Fig. 30 neither discloses nor suggests a table having entries to map virtual disk positions to locations on storage devices, as recited in claim 1.

Col. 8, lines 56-62 reads as follows:

10 One of the storage adapters 37, 38 responds to the storage access request by performing a logical-to-physical translation to determine where the data to be accessed resides on the storage devices, and reads the data from the storage devices and writes the data to the cache memory, for access by the
15 port adapter.

Col. 30, lines 30-55 reads as follows:

20 In this example, the GUI display screen includes, on the left, a list 346 in outline form of storage subsystem components down to a set of logical volumes for one virtual port, and on the right, a list 347 in outline form of host components down to a set of LUNs as addressed from one host controller port.

Col. 32, lines 45-45 reads as follows:

25 A primary copy of the configuration information for the volumes accessible to a host is kept in the storage subsystem and on the host.

Contrary to the assertion in the action, nothing in the text discloses or suggests *an agent coupled to the host, the agent having volatile memory for*
30 *storing a first table, the table having entries to map the virtual storage segments to the storage locations*, as recited in claim 1.

Claim 1 further recites a limitation requiring "a controller coupled to the agent, the controller having non-volatile memory for storing a second

table, the controller intermittently causing contents of the first table to be replaced by contents of the second table." The Action asserts that Blumenau discloses this limitation, and cites Figs. 4-5 and col. 8, lines 56-62, col. 25 lines 1-7, and column 32, lines 45-47 to support the assertion.

5 Applicants disagree.

Col. 8, lines 56-62 reads as follows:

10 One of the storage adapters 37, 38 responds to the storage access request by performing a logical-to-physical translation to determine where the data to be accessed resides on the storage devices, and reads the data from the storage devices and writes the data to the cache memory, for access by the port adapter.

Col. 25, lines 1-7 reads as follows:

15 This assignment information must also be used by the host if the host has an operating system that permits the host to boot from a logical volume in storage linked by the Fibre Channel network to the host, or that permits the operating system of the host to collect information about the logical storage volumes
20 that it can access. In other words, the operating system routine that searches for the storage volumes that are accessible to the host must send Report LUNs commands to only the virtual ports assigned to the host and not to the virtual ports assigned to other hosts.

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Col. 32, lines 45-47 reads as follows:

30 The host should be able to access the primary copy on the storage subsystem if a host's local copy is not available.

35 Nothing in this text discloses or suggests *a storage controller that includes a controller coupled to the agent, the controller having non-volatile memory for storing a second table, the controller intermittently causing contents of the first table to be replaced by contents of the second table, as recited in the claim.*

Claim 1 further recites a limitation that "whereby during an input/output (I/O) operation, the host accesses one of the entries in the first table to determine one of the storage locations." The Action asserts that Blumenau discloses this limitation, and cites col. 32 lines 45-47 to support the assertion. Applicants disagree.

The cited text reads as follows:

The host should be able to access the primary copy on the storage subsystem if a host's local copy is not available.

Nothing in this text discloses or suggests an arrangement in which a host accesses one of the entries in the table stored on the agent to determine one of the storage device locations, as recited in claim 1.

In sum, contrary to the assertion in the Action, Blumenau neither discloses nor suggests the limitations of independent claim 1. Accordingly, Blumenau cannot render obvious independent claim 1.

Claim 2

Claim 2 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

Claim 2 includes a limitation requiring "the second storage table identifies an alternate storage location within the storage location." The rejection in the final Action states only that "Claims 2, 4, 5, 8, and 9 are rejected for the same reasons as claim 1 addressed above." The Action provides no factual basis whatsoever to establish that each element of claim 2 is disclosed or suggested by the cited references. Hence, the Action fails to establish a *prima facie* case of obviousness.

Claim 3

Claim 3 depends from claim 2. Hence, the final Action fails to establish a *prima facie* case of obviousness of claim 3.

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Claims 4-6

Claim 4 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

10 Claim 2 includes a limitation requiring "an alternate storage container comprising alternate storage locations of the storage location correlating to the virtual storage segments." The rejection in the final Action states only that "Claims 2, 4, 5, 8, and 9 are rejected for the same reasons as claim 1 addressed above." The Action provides no factual basis whatsoever to
15 establish that each element of claim 4 is disclosed or suggested by the cited references. Hence, the Action fails to establish a *prima facie* case of obviousness.

Claims 5-6 depends from claim 4. Hence, the final Action fails to establish a *prima facie* case of obviousness of claim 3.

Claim 7

Claim 7 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

5 To establish a *prima facie* case of obviousness, the Action must establish that each element of the claim is disclosed or suggested by the cited references. See, MPEP 2142. Independent **claim 7** includes a limitation requiring "a plurality of variables indicating states of the entry." The Action asserts that Blumenau discloses this limitation, and cites Fig. 23 and
10 col. 26, lines 36-40. Applicants disagree. Nothing in Fig. 23 discloses or suggests a *plurality of variables indicating states of the entry*.

Col. 26, lines 36-40 reads as follows:

15 Separate tables are used because each host listed in the host table can have more than one assigned virtual port. Also included in the volume access and mapping information 269 are optional lists 283 of indices to the virtual port identifiers in the virtual port mapping table 282 assigned to each host in the virtual port host table 281.

20 Contrary to the assertion in the action, nothing in the text discloses or suggests a *plurality of variables indicating states of the entry*, as recited in claim 7.

25 Claims 8-9

Claims 8-9 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

Claim 8 includes a limitation requiring "said first memory is a volatile memory." Claim 9 includes a limitation requiring "said second memory is a non-volatile memory." The rejection in the final Action states only that "Claims 2, 4, 5, 8, and 9 are rejected for the same reasons as claim 1 addressed above." The Action provides no factual basis whatsoever to establish that each element of claims 8-9 are disclosed or suggested by the cited references. Hence, the Action fails to establish a *prima facie* case of obviousness.

10 Claim 12

Claim 12 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, the Action must establish that each element of the claim is disclosed or suggested by the cited references. See, MPEP 2142. Independent claim 12 includes a limitation requiring "turning off input/output operations at the first storage location." The Action asserts that Blumenau discloses this limitation, and cites col. 9 lines 16-19. Applicants disagree.

20 Col. 9, lines 16-19 reads as follows:

Mirroring or RAID (redundant array of inexpensive disks) techniques ensure that the storage adapters 37, 38 can recover data in the event of failure of any one of the storage devices.

25

Contrary to the assertion in the action, nothing in the text discloses or suggests *turning off input/output operations at the first storage location*, as recited in claim 12.

5 Claim 13

Claims 13 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

10 Claim 13 includes a limitation requiring "the turning off step includes activating an invalid state." The rejection in the final Action states only that "Claim 13 is rejected for the same reasons as claim 12 above." The Action provides no factual basis whatsoever to establish that each element of claim 13 is disclosed or suggested by the cited references. Hence, the Action fails to establish a *prima facie* case of obviousness.

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Claims 15-16

Claims 15-16 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

20 Claim 15 includes a limitation requiring "the first table is stored by an agent and during the read operation, the record of the identified portions is sent to the agent." Claim 16 includes a limitation requiring "the mapping between the virtual storage segment and first storage location is contained in numerous first tables, each of the first table stored by a different agent." The
25 rejection in the final Action states only that "Claims 15-16 are rejected on the

same basis as claim 1 addressed above.” The Action provides no factual basis whatsoever to establish that each element of claims 15-16 are disclosed or suggested by the cited references. Hence, the Action fails to establish a *prima facie* case of obviousness.

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CONCLUSION

This application is in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the present application.

Should any issue remain that prevents immediate issuance of the

5 application, the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

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